

## Claims

1           1.     An elongated support suited for positioning a pump or other similar device  
2 disposed below the metal level of a bath of molten metal to support structure disposed  
3 above the metal level, comprising:

4                     an upright housing of a material that is resistant to the heat and  
5 attack of the molten metal, said housing having an internal chamber;

6                     leg structure disposed in the internal chamber, said leg structure  
7 having a tendency to be combustible in the presence of oxygen and non-combustible in  
8 the presence of an inert material at such times as the housing is disposed in the bath of  
9 molten metal; and

10                    an inert non-gaseous material disposed between said housing and  
11 said leg structure to prevent burning of said leg structure.

1           2.     A support as defined in claim 1 in which the housing is formed of a  
2 ceramic material.

1           3.     A support as defined in claim 1 in which the leg structure is formed of a  
2 graphite material.

1           4.     A support structure as defined in claim 1, including a refractory cement  
2 disposed between the leg structure and the housing.

1           5.     A support structure as defined in claim 1, in which the housing comprises  
2 a vertical sleeve.

1           6.     A support structure as defined in claim 1, in which the leg structure is  
2 smaller than the housing so as to form a chamber therebetween, said chamber being  
3 filled with cement.

1           7.     A support structure as defined in claim 6, in which the cement contains  
2 boron nitride.

1           8.     A support structure as defined in claim 7, in which a nylon tape is  
2 disposed between the leg structure and the housing to form a double chamber between  
3 the leg structure and the housing, and including a cement in said double chamber.

1           9.     A support structure as defined in claim 1, in which the leg structure  
2 comprises a vertical leg formed of a graphite material, the graphite leg having an upper  
3 end fastened to a support plate and a lower end fastened to a pump housing.

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1           10.   A support structure suited for positioning a pump or other similar device  
2 below the metal level of a bath of molten metal with respect to support structure above  
3 the metal level, comprising:

4                   an upright housing of a material that is resistant to the heat and  
5 attack of the molten metal, said housing having an internal chamber;

6                   leg structure disposed in the internal chamber, said leg structure  
7 having a tendency to be combustible in the presence of oxygen and non-combustible in  
8 the presence of an inert material at such times as the housing has a lower end  
9 disposed in the bath of molten metal; the leg structure comprising a vertical leg having  
10 a tapered lower end;

11                  a pump housing having a complementary end receiving the lower  
12 end of the leg; and

13                       means for fastening the leg to the pump housing.

1           11.   A support structure as defined in claim 10, in which said fastening means  
2 comprises a cement.

1           12.   A support structure as defined in claim 11, in which the fastening means  
2 comprises threaded means.

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1 ~~13.~~ A support structure having a lower end suited for positioning an object  
2 such as a pump housing below the surface of a bath of molten metal, and an upper end  
3 suited for connection to structure above the bath of molten metal, comprising:  
4 an elongated support leg of a graphite material, a sleeve housing  
5 said support leg, said sleeve being formed of a ceramic that is resistant to the heat of  
6 the molten metal, both the leg and the sleeve having a length suited for connection to a  
7 support structure above the bath of molten metal and a lower end suited for connection  
8 to a structure immersed below the metal level of the bath of molten metal;  
9 means forming a helical groove between the interface of the  
10 graphite leg and the ceramic sleeve extending from the upper end of the leg to a  
11 location proximate said immersed structure; and  
12 a source of an inert gas, and means for connecting said source of  
13 inert gas to said helical groove to fill the groove.

2  
~~14.~~

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1 A support structure as described in claim ~~13~~, where the groove is axially  
2 located on the interface of the leg and the ceramic sleeve to generate an inert gas  
3 protective chamber.

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